# H3C LSQM1WCMB0 Access Controller Module

# Installation Manual

Hangzhou H3C Technologies Co., Ltd.

http://www.h3c.com

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# About This Manual

## Organization

*H3C LSQM1WCMB0 Access Controller Module Installation Manual* is organized as follows:

| Chapter | Contents |
|---|---|
| 1 Product Overview | Introduces the features and appearance of the H3C LSQM1WCMB0 access controller module. |
| 2 Preparing for Installation | Introduces the installation environment of the H3C LSQM1WCMB0 access controller module, the precautions before and during the installation, and the tools required for the installation. |
| 3 Installing the Access Controller Module | Introduces the installation method for the H3C LSQM1WCMB0 access controller module, console cable connection, Ethernet cable connection, and checks after the installation. |
| 4 Initial Startup of the Access Controller Module | Introduces the startup and configuration of the H3C LSQM1WCMB0 access controller module, including the establishment of a configuration environment, connection of the console cable, setting of the terminal parameters, and startup of the access controller module. |
| 5 Software Maintenance | Introduces the software maintenance for the H3C LSQM1WCMB0 access controller module, covering the BootWare menus, software upgrade, and password loss handling. |
| 6 Troubleshooting | Introduces problems that may occur during the startup of the H3C LSQM1WCMB0 access controller module and the solutions to these problems. |

## Conventions

The manual uses the following conventions:

### Command conventions

| Convention | Description |
|---|---|
| **Boldface** | The keywords of a command line are in **Boldface**. |
| *italic* | Command arguments are in *italic*. |
| [ ] | Items (keywords or arguments) in square brackets [ ] are optional. |
| { x \| y \| ... } | Alternative items are grouped in braces and separated by vertical bars. One is selected. |
| [ x \| y \| ... ] | Optional alternative items are grouped in square brackets and separated by vertical bars. One or none is selected. |
| { x \| y \| ... } * | Alternative items are grouped in braces and separated by vertical bars. A minimum of one or a maximum of all can be selected. |
| [ x \| y \| ... ] * | Optional alternative items are grouped in square brackets and separated by vertical bars. Many or none can be selected. |
| &<1-n> | The argument(s) before the ampersand (&) sign can be entered 1 to n times. |
| # | A line starting with the # sign is comments. |

### GUI conventions

| Convention | Description |
|---|---|
| **Boldface** | Window names, button names, field names, and menu items are in Boldface. For example, the **New User** window appears; click **OK**. |
| > | Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**. |

### Symbols

| Convention | Description |
|---|---|
| **Warning** | Means reader be extremely careful. Improper operation may cause bodily injury. |
| **Caution** | Means reader be careful. Improper operation may cause data loss or damage to equipment. |
| **Highlight** | Means an action or information that needs special attention to ensure successful configuration or good performance. |
| **Note** | Means a complementary description. |

## Related Documentation

In addition to this manual, each LSQM1WCMB0 access controller module documentation set includes the following:

| Manual | Description |
|---|---|
| H3C WX Series Access Controllers User Manual | Provides a guide to the operation of H3C series access controller products (including access controllers, access controller modules, and the access controller engine of unified switches). It covers configurations of CLI, VLAN, system maintenance and debugging, WLAN, IPv4, IPv6, port basic configurations, multicast protocols, 802.1x, AAA, SSH, ACL, QoS, description of the acronyms used throughout the manual, and a command index. |
| H3C WX Series Access Controllers Web-Based Configuration Manual | Introduces the Web-based management function of the WX series access controllers. |

## Obtaining Documentation

You can access the most up-to-date H3C product documentation on the World Wide Web at this URL: http://www.h3c.com.

The following are the columns from which you can obtain different categories of product documentation:

[Products & Solutions]: Provides information about products and technologies.

[Technical Support & Document > Technical Documents]: Provides several categories of product documentation, such as installation and operation.

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## Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

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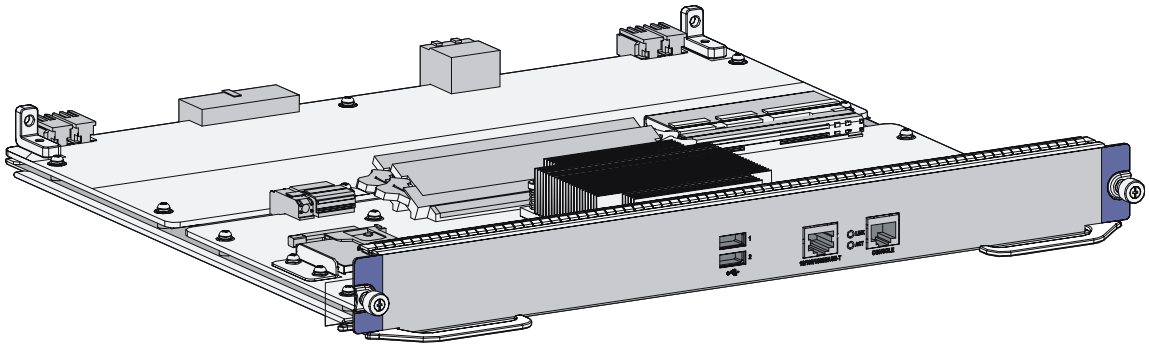
# 1 Product Overview

## Introduction to the LSQM1WCMB0

The LSQM1WCMB0 is an access controller module for the H3C S7502E/S7503E/S7506E/S7506E-V/S7510E Ethernet switches. It is powered by the power supply of the switch in which it is installed and establishes a 10 Gbps communication channel with the switch through an internal interface to implement the wireless access control functionality. The LSQM1WCMB0 access controller module can start working as soon as it is installed into a slot of a switch.

## Physical Properties of the LSQM1WCMB0

**Figure 1-1** Appearance of the LSQM1WCMB0



### 1.1.1 Technical Specifications

The LSQM1WCMB0 provides the wireless access control functionality.

From left to right, the access controller module provides two USB interfaces, one 10/100/1000Base-T management Ethernet interface, two status LEDs (LINK and ACT) for the management Ethernet interface, and one console port.

**Table 1-1** Technical specifications for the LSQM1WCMB0

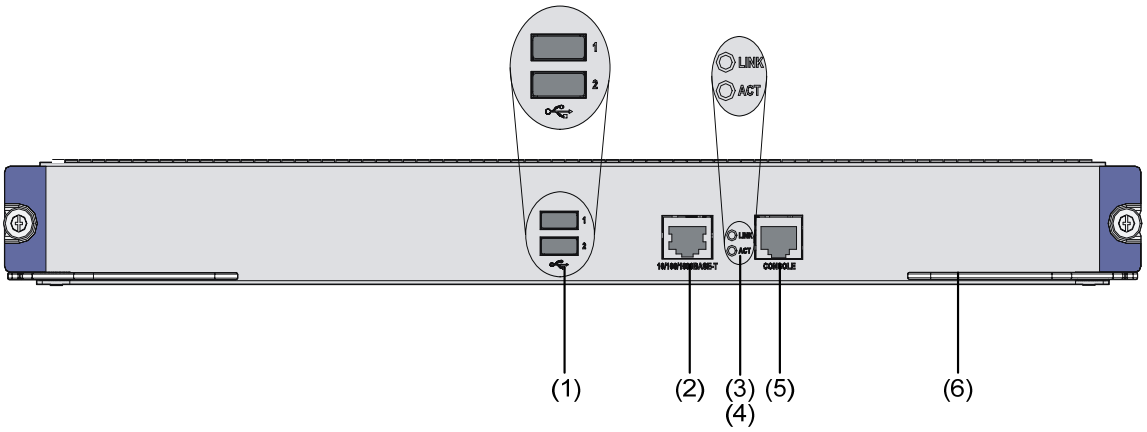
| Item | Specification |
|---|---|
| CPU type | BCM1125H |
| CPU frequency | 600 MHz |
| Boot ROM size | 512 KB |
| SDRAM size | 1 GB |
| Dimensions (L × D) | 366.7 × 340 mm (14.4 × 13.4 in.) |
| Max power consumption | 80 W |
| Connector types | RJ-45 and USB |
| Number of interfaces | 4 |

| Item | Specification |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| Relative humidity (noncondensing) | 10% to 90% |

## Front Panel and LEDs

The following figure depicts the front panel of the LSQM1WCMB0:

**Figure 1-2** Front panel of the LSQM1WCMB0




| | |
| --- | --- |
| (1) USB interfaces | (2) 10/100/1000Base-T management Ethernet interface |
| (3) LINK LED | (4) ACT LED |
| (5) Console port | (6) Ejector lever |

Table 1-2 describes the meanings of the management Ethernet interface LEDs:

**Table 1-2** Description of the management Ethernet interface LEDs

| LEDs | Meaning |
| --- | --- |
| LINK | • Off: No link is present.<br>• On: A link is present. |
| ACT | • Off: No data is being transmitted/received.<br>• Blinking: Data is being transmitted/received. |

# 2 Preparing for Installation

## Safety Precautions

To avoid possible bodily injury or equipment impairment, please read the following safety recommendations carefully before installing the LSQM1WCMB0 access controller module. Note that these recommendations do not cover all possible hazardous conditions.

### General Safety Recommendations

- Check that the access controller module is to be installed in a clean and dust-free switch chassis.
- Keep the switch chassis and installation tools away from walk areas.
- Do not wear loose clothing, ornaments (including finger rings and necklaces), or any other articles that may get caught by the board when installing or maintaining the access controller module.

---

**Note**

Please timely clean the air filter on the switch chassis during the use of the LSQM1WCMB0 to prevent poor ventilation.

---

### Electricity Safety

- Carefully check your work area for possible hazards, such as ungrounded power system, unreliable grounding, and moist floor.
- Locate the emergency power switch in the equipment room before installing the access controller module so that you can cut off the power immediately in case of accident.
- Avoid maintaining the access controller module alone with the switch powered on.
- When operations are not allowed with the switch powered on, always double check that the power is disconnected.

### ESD Prevention

To avoid electrostatic discharge (ESD) damage to the electronic components of the access controller module, apart from the general ESD-prevention measures taken on the installation site, observe the precautions below:

- Always wear an ESD-preventive wrist strap when installing the access controller module.
- When checking or moving the access controller module, always take it by its edges. Do not touch any electronic component or printed circuit.

Take the following steps to use the ESD-preventive wrist strap:

Put on the ESD-prevention wrist strap.

Fasten the ESD-preventive wrist strap and verify that it makes good skin contact.

Plug the grounding terminal of the ESD-preventive wrist strap into the ESD-preventive wrist strap jack on the switch chassis, or attach the ground wire of the ESD-preventive wrist strap to the grounding screw on the chassis with an alligator clip.

Verify that the ESD-preventive wrist strap is well grounded.

---

**Caution**

For the safety purpose, check the resistance of the ESD-preventive wrist strap, which should be between 1 to 10 megohm.

---

# Checking the Installation Site

The installation environment for the access controller module must meet the requirements described in this section.

## Temperature and Humidity Requirements

Proper temperature and humidity must be maintained in the equipment room. Lasting high relative humidity tends to cause poor insulation, electricity creepage, mechanical property change of materials, and corrosion of metal parts, while lasting low relative humidity can result in loose screws due to washer contraction, and even electrostatic discharge (ESD) that will cause the complementary metal-oxide-semiconductor (CMOS) circuitry to fail. A proper temperature condition must also be maintained to prevent premature material aging and degraded reliability accompanying high temperature conditions.

## Cleanliness

Dust is hazardous to the operation safety of the access controller module. Dust buildup on the chassis may result in static adsorption, causing poor contact of metal components or contact points. When the relative indoor humidity is low, especially, electrostatic adsorption is more likely to happen. This not only shortens the service life of your device but also causes communications failures.

Table 2-1 lists the limit on dust content in the equipment room.

**Table 2-1** Dust concentration limit in the equipment room

| Substance | Concentration limit (particles/$m^3$) |
|---|---|
| Dust particles | ≤ 3 x $10^4$ (No visible dust on desk in three days) |
| Note: Dust particle diameter ≥ 5 μm | |

In addition, the equipment room should meet the rigorous limits on salts, acids and sulfides to eliminate corrosion and premature aging of some parts. Table 2-2 lists the limits on harmful gases in the equipment room.

**Table 2-2** Limits on harmful gases in the equipment room

| Gas | Limit ($mg/m^3$) |
|---|---|
| $SO_2$ | 0.2 |
| $H_2S$ | 0.006 |
| $NH_3$ | 0.05 |
| $Cl_2$ | 0.01 |

### EMI Prevention

All interference sources, from the outside or inside of the switch and application system, adversely affect the access controller module in the conduction patterns of capacitance coupling, inductance coupling, electromagnetic wave radiation, and common impedance (including grounding system) coupling, and cable conduction (including power cables, signal cables and output cables). To prevent interference, do the following:

- Take effective measures against interference from the power grid.
- Keep the protection ground (PGND) of the switch as far as possible from the grounding device or lightning protection grounding device of the power supply equipment.
- Keep the switch far away from high-power radio launchers, radars, and equipment with high-frequency and high current.
- Use electromagnetic shielding when necessary.

### Grounding Requirements

A good grounding system is essential for lightning protection, interference prevention and ESD prevention to ensure the stable and reliable operation of the switch and the access controller module.

## Installation Tools and Meters

**Table 2-3** List of installation tools and meters

| Type | Tools |
|---|---|
| Fastening tools | Phillips screwdrivers |
| Special tools | ESD-preventive wrist strap |
| Fiber cleaning tools | Airlaid paper, fiberscope |
| Meters | Multimeter, 500V Megohmmeter (for measuring insulation resistance), earth resistance tester |

**Note**

The installation tools and meters are not shipped with the LSQM1WCMB0.

# 3 Installing the Access Controller Module

**Caution**

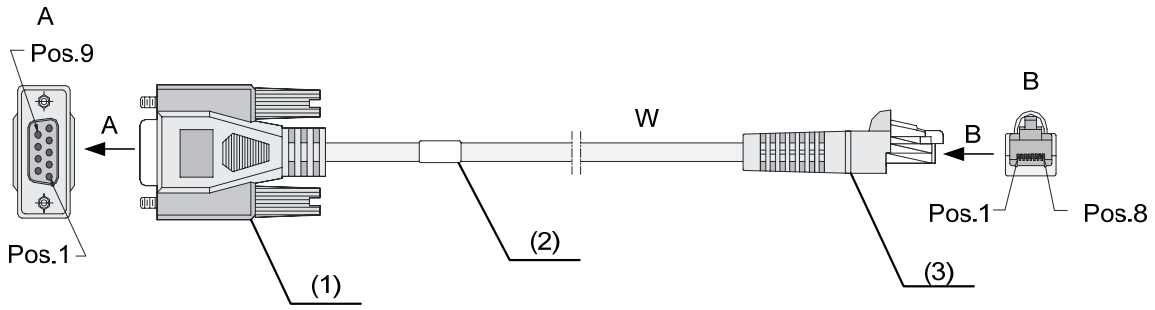
- Always wear a well grounded ESD-preventive wrist strap when installing or removing the access controller module.
- After removing the blank filler panel from the slot where the access controller module is to be installed, keep it properly for future use.

## Console Cable Connection

### Introduction to the Console Cable

As shown in Figure 3-1, the console cable is an 8-core cable with an RJ-45 connector at one end for the console port of the LSQM1WCMB0 and a DB-9 female connector at the other end for the 9-pin serial port of a configuration terminal.

**Figure 3-1** Console cable




| | |
|---|---|
| (1) DB-9 connector | (2) Main label |
| (3) RJ-45 connector | |

**Table 3-1** Console cable pinouts

| RJ-45 | Signal | Direction | DB-9 (Modem) | DB-9 (Console) |
|---|---|---|---|---|
| 1 | RTS | → | 7 | 8 |
| 2 | DTR | → | 4 | 6 |
| 3 | TXD | → | 3 | 2 |
| 4 | DCD | ← | 1 | 5 |

| RJ-45 | Signal | Direction | DB-9 (Modem) | DB-9 (Console) |
|---|---|---|---|---|
| 5 | GND | — | 5 | 5 |
| 6 | RXD | ← | 2 | 3 |
| 7 | DSR | ← | 6 | 4 |
| 8 | CTS | ← | 8 | 7 |

### Connecting the Console Cable

Follow these steps to connect the console cable before configuring the LSQM1WCMB0 using a console terminal device, a PC for example:

1) Connect the DB-9 female connector of the console cable to the serial port of the PC.
2) Connect the RJ-45 connector of the console cable to the console port of the LSQM1WCMB0.

**Caution**

The console port is clearly identified. Be sure to plug the cable into the correct port.

**Note**

With the LSQM1WCMB0 powered on, it is recommended to operate the console cable as follows:

- When connecting the LSQM1WCMB0 to a PC, first connect the DB-9 connector of the console cable to the PC and then connect the RJ-45 connector to the LSQM1WCMB0.
- When removing the connection, first unplug the RJ-45 connector and then unplug the DB-9 connector.

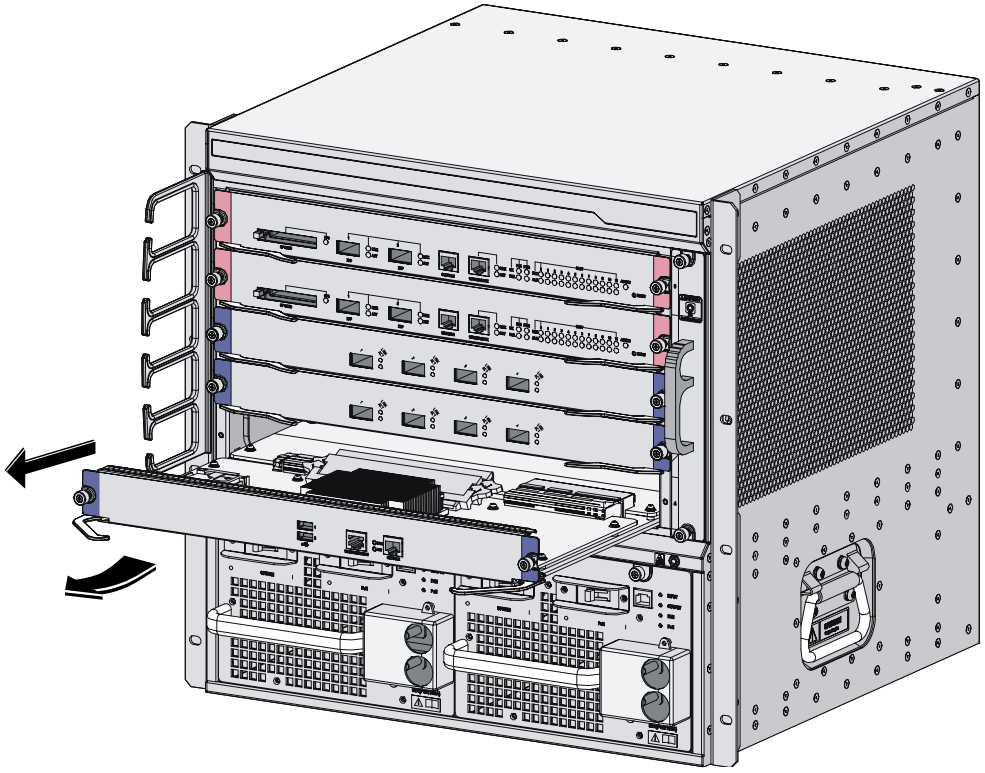
## Removing and Installing the LSQM1WCMB0

**Note**

The LSQM1WCMB0 is hot swappable.

## Removing the LSQM1WCMB0

**Figure 3-2** Remove the LSQM1WCMB0



1) Face the front side of the switch.
2) Loosen the captive screws on the access controller module with a Philips screwdriver.
3) Simultaneously pivot the ejector levers of the access controller module away from the front panel to detach the board from the backplane.
4) Gently pull the access controller module out of the slot along the guide rails.
5) If the slot is to remain empty, install a blank filler panel to prevent dust from getting into the switch chassis and ensure good ventilation.

## Installing the LSQM1WCMB0

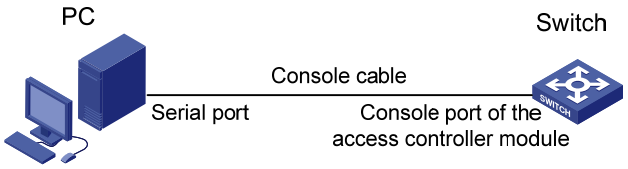
1) Face the front side of the switch.
2) Choose an empty slot and remove the blank filler panel.
3) Push the access controller module into slot along the guide rails until the positioning hole of the board is seated onto the positioning pin on the backplane.
4) Pivot the ejector levers toward the front panel to lock the access controller module in place.
5) Fasten the captive screws on the access controller module with a Philips screwdriver.
6) If the switch is powered off, power on the switch.

# 4 Initial Startup of the Access Controller Module

## Setting Up a Configuration Environment

Set up a configuration environment by connecting the console port of the LSQM1WCMB0 access controller module to a console terminal, a PC in this example, as shown in Figure 4-1.

**Figure 4-1** Set up a network connection for LSQM1WCMB0 configuration




## Connecting the Console Cable

1) Connect the DB-9 female connector of the console cable to the serial port of the PC.
2) Connect the RJ-45 connector of the console cable to the console port of the LSQM1WCMB0.

## Setting Terminal Parameters

Before configuring your access controller module through a console terminal, a PC running Microsoft Windows XP for example, you need to set the parameters for the console terminal as follows:

- Bits per second: 9600
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none
- Terminal emulation: VT100 or Auto detect.

Follow these steps to set the parameters:

1) Start the computer and select **Start** > **Programs** > **Accessories** > **Communications** > **HyperTerminal**. The **Connection Description** dialog box appears, as shown below.

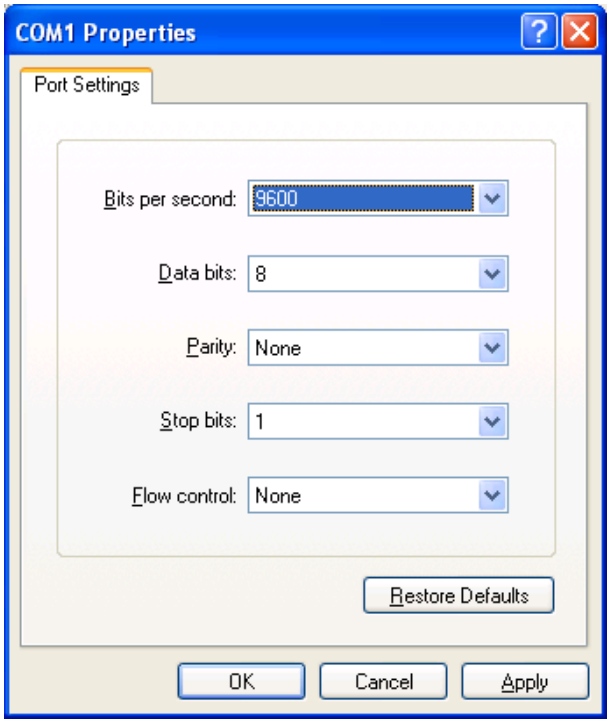
**Figure 4-2** Set up a new connection

Type a name, H3C in this example, for the new connection in the **Name** field and click **OK**. The **Connect To** dialog box appears, as shown below.

**Figure 4-3** Connect To dialog box

2) Select a serial port from the **Connect using** drop-down list. Be sure to select the serial port to which the console cable is actually connected. Then click **OK**.
3) Set the port parameters as shown below.

**Figure 4-4** Set serial port parameters

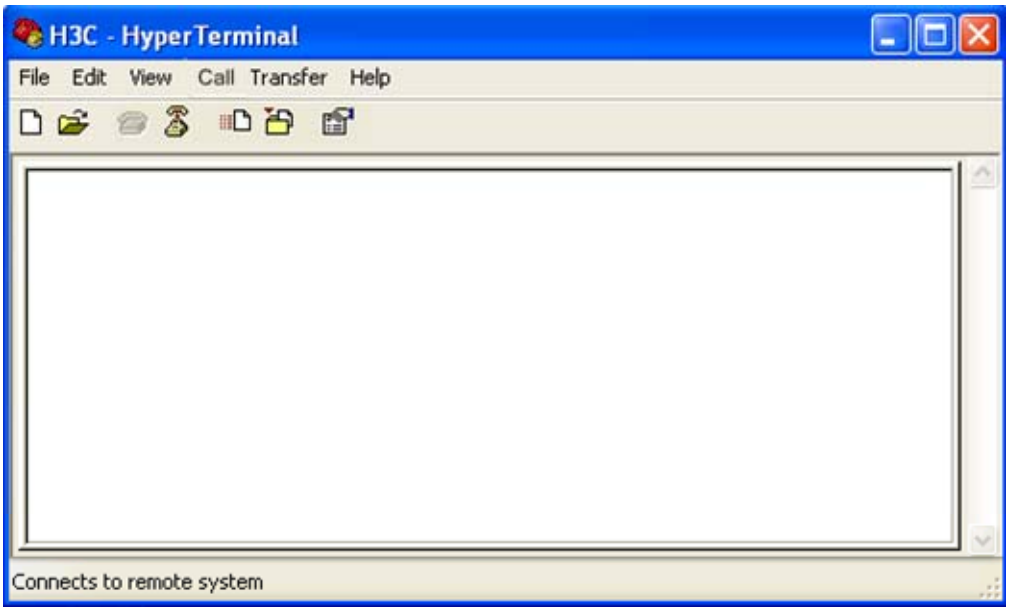



**Note**

To use the default settings, click **Restore Defaults**.

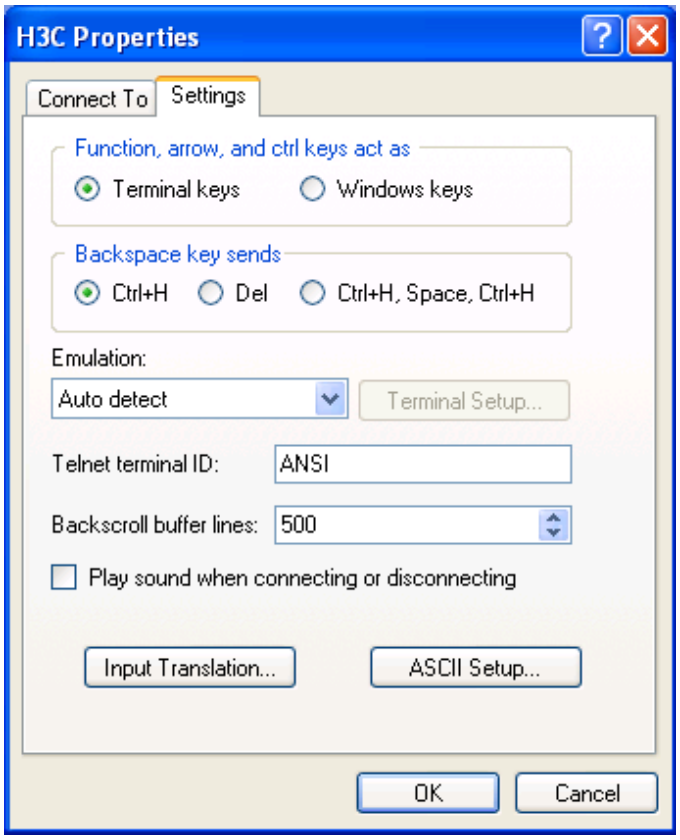
4) Click **OK**. The **HyperTerminal** window appears, as shown below.

**Figure 4-5** HyperTerminal window



5) Set HyperTerminal properties. In the HyperTerminal window, choose **File** > **Properties** from the menu, and select the **Settings** tab to enter the properties setting dialog box, as shown below. Select **VT100** or **Auto detect** from the **Emulation** drop-down list, and click **OK** to return to the HyperTerminal window.

**Figure 4-6** Set the emulation type




# Starting Up the LSQM1WCMB0

## Checks Before Power-On

Before starting up the access controller module, verify that:

- The power cables and ground cable are correctly connected.
- The power outlet voltage meets the voltage requirement of the switch.
- The console cable is correctly connected, the console terminal or PC is running, and the terminal parameters are properly set.

## Powering On the Access Controller Module

Upon power-on of the LSQM1WCMB0, the console terminal displays the following information:

```
****************************************
*                                      *
*       H3C WCMB BootWare , Ver 1.08   *
*                                      *
****************************************

Copyright(c) 2004-2007 Hangzhou H3C Tech. Co., Ltd.
```

```
      Compiled date   : Nov 17 2006, 12:20:43
      CPU type        : BCM1125H
      CPU L1 Cache    : 32KB
      CPU Clock Speed : 600MHz
      Memory Type     : DDR SDRAM
      Memory Size     : 1024MB
      Memory Speed    : 166MHz
      BootWare Size   : 512KB
      cfa0 Size      :  256MB

      CPLD Version is 003
      PCB Version is Ver.C

  Press Ctrl+B to enter extend boot menu...
```

The last line provides you an access to the Boot Menu.

- To enter the BootWare main menu, press **Ctrl + B** within five seconds. For details about the BootWare main menu, refer to section "BootWare Main Menu" on page 5-3. If you perform no operation or press a key other than **Ctrl + B** within five seconds, once the remaining comes to 0, the system starts the auto boot process. The following information appears:

```
  The current starting file is main application file--flash:/main.bin!

  The main application file is self-decompressing.....................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.........................OK!

  System is starting...
User interface con0 is available.



Press ENTER to get started.
```

The information above indicates that the auto boot of the LSQM1WCMB0 access controller module is completed.

Press **Enter**. The following prompt appears:

```
<H3C>
```

This means that the LSQM1WCMB0 is ready to configure.

**Note**

- During the startup process, the CPLD will be automatically upgraded to the latest version, if any. The system will display “The board cpld update successfully, please repower device.” after the upgrade process. At this prompt, power off and restart the device so that the new CPLD version takes effect.
- The LSQM1WCMB0 access controller module provides abundant command views. For detailed descriptions about the configuration commands and the CLI, refer to *H3C WX Series Access Controllers User Manual* .

# 5 Software Maintenance

## Introduction

### Files Managed by the LSQM1WCMB0

The LSQM1WCMB0 access controller module manages the following three types of files:

- BootWare program file
- Application files
- Configuration files

### BootWare Program File

The BootWare program file is used by the LSQM1WCMB0 access controller module to load the application program. The whole BootWare program file consists of basic BootWare and extended BootWare.

- The basic BootWare implements system initialization.
- Extended BootWare provides abundant man-machine interaction functions. It is used for interface initialization for application program and boot system upgrade.
- The whole BootWare refers to the combination of the two sections. After the basic BootWare is started, you can load or upgrade the extended BootWare.

### Application Files

The LSQM1WCMB0 access controller module supports the Dual Image function. By default, three application files are defined for system boot:

- Main application file (main file)
- Backup application file (backup file)
- Secure application file (secure file)

These files are stored in the built-in CF card, with an extension name of **.bin**.

Typically, the default application file is written into the built-in CF card before the access controller module is delivered.

If you have loaded the three application files into the CF card, the system will use one of these three files to boot in the order described below. For how to set the application file types, refer to section “Setting Application and Configuration File Types” on page 5-20.

The default names and types of the application files and their loading sequence are as follows:

- Main application file. The default name is **main.bin**, and the file type is M. It is the default application file to be loaded when the system starts.
- Backup application file. The default name is **backup.bin**, and the file type is B. Upon failure of loading the main application file, the system tries to load the backup file.
- Secure application file. The default name is **secure.bin**, and the file type is S. If the system fails to load the backup application file, the secure application file is the last choice. If it again fails to load the secure application file, the system will give a boot failure message.

Note that:

- Only the application files of the M, B, and S types can be used to boot the system, while an application file of the N type (an application file other than the M, B, or S type) cannot.
- After the application program is loaded, you can rename the application files through the CLI or change the types of the M, B and N application files through the BootWare menu or the CLI. However, you cannot change the type of the S application file.
- As the S application file is the last choice for booting the system, you cannot change its type or obtain it by changing the type of another type of application file. You can only download it using the BootWare menu.
- Only one file of the same type (M, B, or S) can exist in the CF card. For example, if an application file of type M+B exists in the CF card, another file of type M or B cannot exist. If the type of another file is changed to B, the existing type M+B file changes to a file of type M.

## Configuration Files

With a file extension of **.cfg**, the configuration files store the configuration information of the LSQM1WCMB0 access controller module. Typically, the default configuration file is written into the built-in CF card before the access controller module is delivered.

---

**Caution**

- The length of a configuration file name must not exceed 64 characters (including the drive name and the string terminator). For example, if the drive name is **cfa0:/**, the maximum length of a file name is [ 64 – 1 – 4 ] = 59 characters.
- If the length of a file name exceeds 59 characters, error will occur in file operations on that file. It is recommended to keep the file name within 16 characters.
- There is a limitation on the length of file name that can be displayed in BootWare. If a file name is shorter than 30 characters, all the characters of the file name can be displayed; if a file name has or exceeds 30 characters, only the first 26 characters of the file name can be displayed, followed by a tilde (~) and a serial number. The serial number identifies position in sequence of the file. For example, if some files, file A, file B and file C, have a file name longer than 30 characters, the name of file A will appear as the first 26 characters plus ~001, that of file B will appear as the first 26 characters plus ~002, and that of file C will appear as the first 26 characters plus ~003.

---

## Approaches of Software Maintenance for the LSQM1WCMB0

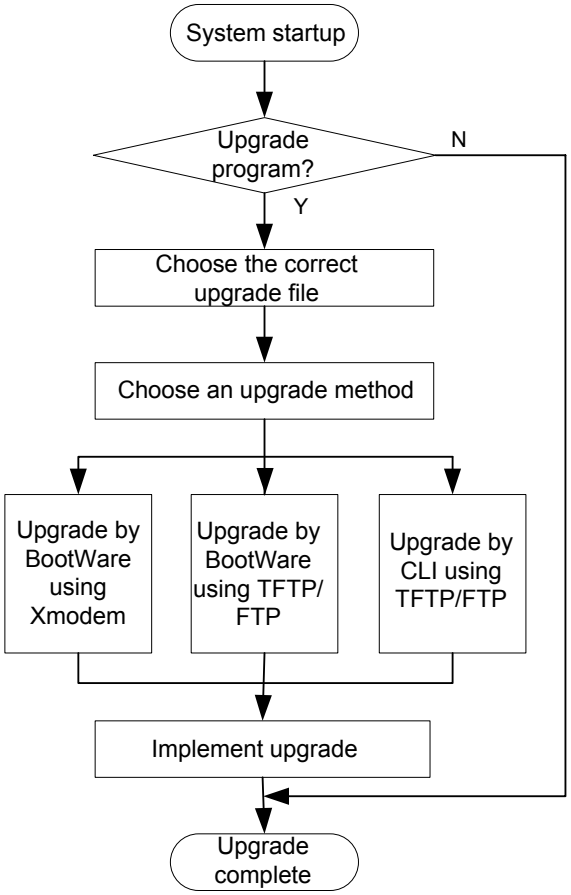
- Upgrading the BootWare and application files using the Xmodem protocol through a serial port
- Upgrading application files through BootWare menu options using TFTP or FTP through an Ethernet port
- Uploading and downloading the application and configuration files by CLI using TFTP/FTP

**Note**

- The BootWare program is upgraded together with the Comware application version. When you upgrade the Comware application program, the system automatically checks whether the current BootWare version is compliant with the Comware application and upgrades the BootWare version if needed.
- Before upgrading the software of your access controller module, check the current BootWare version and Comware application version to make sure that the correct file is used for the upgrade. For the association between the Comware application version and the BootWare version, refer to the hardware and software compatibility matrix in *Release Notes*.

## Software Upgrade Flow

**Figure 5-1** Software upgrade flowchart




# BootWare Menus

## BootWare Main Menu

Upon power-on or reboot of the LSQM1WCMB0, the console terminal connected with the access controller module first displays the following information:

```
System start booting...
```

Then, the following information appears:

```
Booting Normal Extend BootWare....
The Extend BootWare is self-decompressing.................
Done!
********************************************************************************
*                                                                              *
*                   H3C WCMB BootWare, Version 1.08                            *
*                                                                              *
********************************************************************************
Copyright (c) 2004-2007 Hangzhou H3C Technologies Co., Ltd.
Compiled Date       : Sep 24 2007
CPU Type            : BCM1125H
CPU L1 Cache        : 32KB
CPU Clock Speed     : 600MHz
Memory Type         : DDR SDRAM
Memory Size         : 1024MB
Memory Speed        : 166MHz
BootWare Size       : 512KB
cfa0 Size           : 256MB
CPLD Version        : 003
PCB Version         : Ver.C

BootWare Validating...

Press Ctrl+B to enter extended boot menu...
```

**Note**

The extended boot menu is referred to as BootWare main menu in this manual unless otherwise stated.

At the prompt above, press **Ctrl+B**. The system prompts you for the password:

```
Please input BootWare password:
```

You have three chances to enter the BootWare password (the initial password is null). If you fail to enter the correct password three times in a row, the system will be halted and you can only restart the system. After you provide the correct password, the system enters the BootWare main menu:

```
Note: The current operating device is cfa0
Enter < Storage Device Operation > to select device.

==============================<EXTEND-BOOTWARE MENU>==============================
|<1> Boot System                                                               |
|<2> Enter Serial SubMenu                                                      |
|<3> Enter Ethernet SubMenu                                                    |
|<4> File Control                                                              |
|<5> Modify BootWare Password                                                  |
|<6> Skip Current System Configuration                                         |
```

```
|<7> BootWare Operation Menu                                                |
|<8> Clear Super Password                                                   |
|<9> Storage Device Operation                                               |
|<0> Reboot                                                                 |
============================================================================
Enter your choice(0-9):
```

## BootWare Submenus

### Serial interface submenu

You can upgrade the application program, change the serial interface baud rate and so on through this submenu.

Select **2** in the BootWare main menu to enter the serial interface submenu:

```
============================<Enter Serial SubMenu>==========================
|Note:the operating device is cfa0                                          |
|<1> Download Application Program To SDRAM And Run                          |
|<2> Update Main Application File                                           |
|<3> Update Backup Application File                                         |
|<4> Update Secure Application File                                         |
|<5> Modify Serial Interface Parameter                                      |
|<0> Exit To Main Menu                                                      |
============================================================================
Enter your choice(0-5):
```

### Ethernet interface submenu

Select **3** in the BootWare main menu to enter the Ethernet interface submenu. The system displays:

```
============================<Enter Ethernet SubMenu>==========================
|Note:the operating device is cfa0                                          |
|<1> Download Application Program To SDRAM And Run                          |
|<2> Update Main Application File                                           |
|<3> Update Backup Application File                                         |
|<4> Update Secure Application File                                         |
|<5> Modify Ethernet Parameter                                              |
|<0> Exit To Main Menu                                                      |
|<Ensure The Parameter Be Modified Before Downloading!>                     |
============================================================================
Enter your choice(0-5):
```

### File control submenu

Select **4** in the BootWare main menu to enter the file control submenu. You can view the application file types, rename files, and delete files through this submenu.

```
================================<File CONTROL>==============================
|Note:the operating device is cfa0                                          |
|<1> Display All File(s)                                                    |
|<2> Set Application File type                                              |
|<3> Delete File                                                            |
|<0> Exit To Main Menu                                                      |
```

```
================================================================================
Enter your choice(0-3):
```

### BootWare operation submenu

Select **7** in the BootWare main menu to enter the BootWare operation submenu:

```
==========================<BootWare Operation Menu>==========================
|Note:the operating device is cfa0                                          |
|<1> Backup Full BootWare                                                   |
|<2> Restore Full BootWare                                                  |
|<3> Update BootWare By Serial                                              |
|<4> Update BootWare By Ethernet                                            |
|<0> Exit To Main Menu                                                      |
================================================================================
Enter your choice(0-4):
```

### Storage device operation submenu

Select **9** in the BootWare main menu to enter the storage device operation submenu:

```
================================<DEVICE CONTROL>================================
|<1> Display All Available Nonvolatile Storage Device(s)                    |
|<2> Set The Operating Device                                               |
|<3> Set The Default Boot Device                                            |
|<0> Exit To Main Menu                                                      |
================================================================================
Enter your choice(0-3):
```

# Upgrading the BootWare

**Note**

- The BootWare program is upgraded together with the Comware application version. When you upgrade the Comware application program, the system automatically checks whether the current BootWare version is compliant with the Comware application and upgrades the BootWare version if needed.
- Before upgrading the software of your access controller module, check the current BootWare version and Comware application version to make sure that the correct file is used for the upgrade. For the association between the Comware application version and the BootWare version, refer to the hardware and software compatibility matrix in *Release Notes*.

## Upgrading the BootWare Through a Serial Connection

To upgrade the BootWare through a serial port, use the Xmodem protocol.

Xmodem is a file transfer protocol that is widely used due to its simplicity and good performance. Xmodem transfers files via serial ports. It supports two types of data packets (128 bytes and 1 KB), two

check methods (checksum and CRC), and error packet retransmission mechanism (generally the maximum number of retransmission attempts is ten).

The Xmodem transmission procedure is completed by the cooperation of a receiving program and a sending program. The receiving program sends a negotiation character to negotiate a check method. After the negotiation, the sending program starts to send data packets. Upon receiving a complete packet, the receiving program checks the packet using the agreed method.

- If the check succeeds, the receiving program sends an ACK character and the sending program proceeds to send the next packet.
- If the check fails, the receiving program sends a NAK character and the sending program retransmits the packet.

### Modifying serial communication parameters

To save the upgrade time, a high serial port baud rate is preferred; to ensure the transmission reliability, the baud rate needs to be reduced.

Follow these steps to change the serial communication baud rate:

1) Enter the BootWare main menu and select **2** to enter the serial interface submenu. Then, select **5** in the submenu. The system displays the following:

```
==================================<BAUDRATE SET>============================
|Note:'*'indicates the current baudrate                                     |
|     Change The HyperTerminal's Baudrate Accordingly                       |
|---------------------------<Baudrate Avaliable>---------------------------|
|<1> 9600(Default)*                                                         |
|<2> 19200                                                                  |
|<3> 38400                                                                  |
|<4> 57600                                                                  |
|<5> 115200                                                                 |
|<0> Exit                                                                   |
============================================================================
Enter your choice(0-5):
```

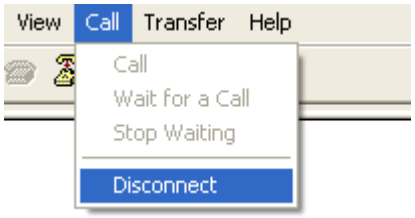
2) Select an appropriate baud rate. For example, select **5** for 115200 bps. The following information appears:

```
Baudrate has been changed to 115200 bps.
Please change the terminal's baudrate to 115200 bps, press ENTER when ready.
```

Now that the serial interface baud rate of the LSQM1WCMB0 has been changed to 115,200 bps while that of the terminal is still 9,600 bps, the LSQM1WCMB0 access controller module and the terminal cannot communicate with each other. For this reason, you need to change the baud rate to 115,200 bps in HyperTerminal.

3) Disconnect the terminal connection in HyperTerminal, as shown below:

**Figure 5-2** Disconnect the terminal connection

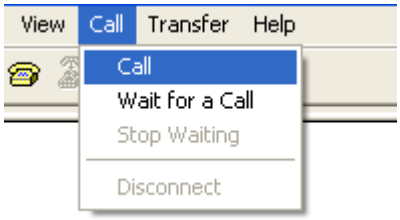


4) Choose **File** > **Properties**. In the **Properties** dialog box, click **Configure…** and select **115,200** in the **Bits per second** drop-down list box.

**Figure 5-3** Modify the baud rate

5) Select **Call** > **Call** to reestablish the call connection.

**Figure 5-4** Reconnect the call




6) Then, press **Enter** in the serial interface submenu. The system prompts the current baud rate and returns to the parent menu.

```
==============================<Enter Serial SubMenu>==========================
|Note:the operating device is cfa0                                           |
|<1> Download Application Program To SDRAM And Run                           |
|<2> Update Main Application File                                            |
|<3> Update Backup Application File                                          |
|<4> Update Secure Application File                                          |
|<5> Modify Serial Interface Parameter                                       |
|<0> Exit To Main Menu                                                       |
==============================================================================
Enter your choice(0-5):
```

**Note**

After downloading files with a changed baud rate, timely change the baud rate back to 9,600 bps in HyperTerminal to ensure the normal display on the console screen when the system boots or reboots.

### Upgrading the BootWare through a serial connection

Follow these steps to upgrade the BootWare through a serial connection:

1) Enter the BootWare main menu (refer to section "BootWare Main Menu" on page 5-3), select **7** to enter the BootWare operation submenu. For details about this menu, refer to section "BootWare operation submenu" on page 5-6.
2) Select **3** in the BootWare operation submenu. The following prompt appears:

```
======================<BOOTWARE OPERATION SERIAL SUB-MENU>=====================
|<1> Update Full BootWare                                                     |
|<2> Update Extend BootWare                                                   |
|<3> Update Basic BootWare                                                    |
|<4> Modify Serial Interface Parameter                                        |
|<0> Exit To Main Menu                                                        |
===============================================================================
Enter your choice(0-4):
```

3) Select **4** in the BootWare operation serial interface submenu. The system prompts you to modify the baud rate.

```
==================================<BAUDRATE SET>================================
|Note:'*'indicates the current baudrate                                       |
|     Change The HyperTerminal's Baudrate Accordingly                         |
|-----------------------------<Baudrate Avaliable>--------------------------- |
|<1> 9600(Default)*                                                           |
|<2> 19200                                                                    |
|<3> 38400                                                                    |
|<4> 57600                                                                    |
|<5> 115200                                                                   |
|<0> Exit                                                                     |
===============================================================================
Enter your choice(0-5):
```

4) Change the communication baud rate by referring to section "Modifying serial communication parameters" on page 5-7. After the modification, the system displays the following information:

```
Baudrate has been changed to 115200 bps.
Please change the terminal's baudrate to 115200 bps, press ENTER when ready.
The current baudrate is 115200 bps
==================================<BAUDRATE SET>============================
|Note:'*'indicates the current baudrate                                     |
|     Change The HyperTerminal's Baudrate Accordingly                       |
|--------------------------<Baudrate Avaliable>--------------------------|
|<1> 9600(Default)                                                          |
|<2> 19200                                                                  |
|<3> 38400                                                                  |
```

```
|<4> 57600                                                                    |
|<5> 115200*                                                                  |
|<0> Exit                                                                     |
==============================================================================
Enter your choice(0-5):
```

5) Select **0** to return to the BootWare operation serial interface submenu.

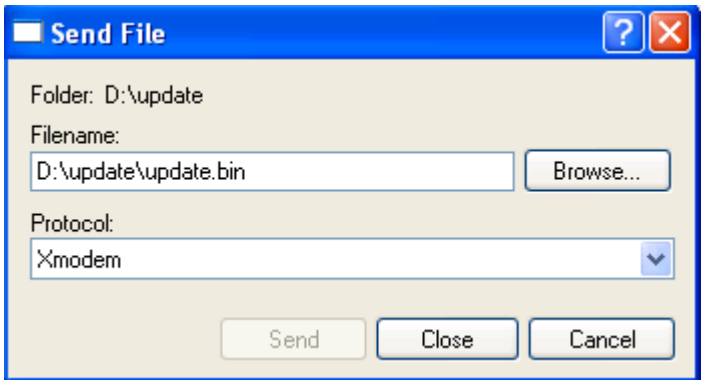
```
======================<BOOTWARE OPERATION SERIAL SUB-MENU>=====================
|<1> Update Full BootWare                                                     |
|<2> Update Extend BootWare                                                   |
|<3> Update Basic BootWare                                                    |
|<4> Modify Serial Interface Parameter                                        |
|<0> Exit To Main Menu                                                        |
==============================================================================
Enter your choice(0-4):
```

6) Select **1** in the BootWare operation serial interface submenu. The following prompt appears:

```
Please Start To Transfer File, Press <Ctrl+C> To Exit.
Waiting ...CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
```

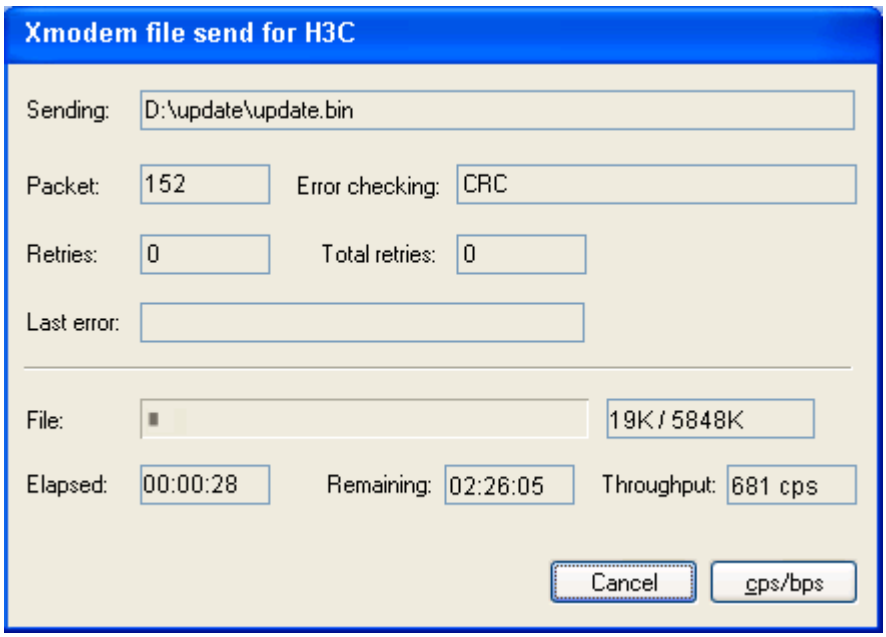
7) Select **Transfer** > **Send file…** in the HyperTerminal window. The following dialog box appears:

**Figure 5-5 Send File** dialog box




8) Click **Browse…** to select the application file to be downloaded, and select **Xmodem** from the **Protocol** drop-down list. Then click **Send**. The following dialog box appears:

**Figure 5-6** Download the file using Xmodem




Upon successful download, the system displays the following information:

```
Download successfully!
354944 bytes downloaded!
Updating Basic BootWare? [Y/N]Y
Updating Basic BootWare..............Done!
Updating Extend BootWare? [Y/N]Y
Updating Extend BootWare.............Done!
```

9) Change the baud rate on the console terminal from 115,200 bps back to 9,600 bps, and reboot the LSQM1WCMB0 access controller module.

---

**Note**

- The actual file name, size and path may differ from what are shown in the figure above. Before upgrading the software, check the current BootWare version and application program version to make sure that the correct file is used for the upgrade.
- After you download files with a changed baud rate, timely change the baud rate back to 9,600 bps in HyperTerminal to ensure the normal display on the console screen when the system boots or reboots.

---

## Upgrading the BootWare Through the Management Ethernet Interface

Follow these steps to upgrade the BootWare through the management Ethernet interface:

1) Enter the BootWare main menu (refer to section "BootWare Main Menu" on page 5-3), select **7** to enter the BootWare operation submenu. For details about this menu, refer to section "BootWare operation submenu" on page 5-6.

2) Select **4** in the BootWare operation submenu to enter the BootWare operation Ethernet interface submenu:

```
======================<BOOTWARE OPERATION ETHERNET SUB-MENU>====================
|<1> Update Full BootWare                                                      |
|<2> Update Extend BootWare                                                    |
|<3> Update Basic BootWare                                                     |
|<4> Modify Ethernet Parameter                                                 |
|<0> Exit To Main Menu                                                         |
================================================================================
Enter your choice(0-4):
```

3) Select **4** in the BootWare operation Ethernet interface submenu. The system prompts you to modify the network parameters.

```
============================<ETHERNET PARAMETER SET>============================
|Note:       '.' = Clear field.                                                |
|            '-' = Go to previous field.                                       |
|          Ctrl+D = Quit.                                                      |
================================================================================
Protocol (FTP or TFTP) :tftp
Load File Name         :main.bin
Target File Name       main.bin
Server IP Address      :192.168.0.1
Local IP Address       :192.168.0.2
Gateway IP Address     :192.168.0.1
```

After modification of the parameters, the system display returns to the BootWare operation Ethernet interface submenu.

```
======================<BOOTWARE OPERATION ETHERNET SUB-MENU>====================
|<1> Update Full BootWare                                                      |
|<2> Update Extend BootWare                                                    |
|<3> Update Basic BootWare                                                     |
|<4> Modify Ethernet Parameter                                                 |
|<0> Exit To Main Menu                                                         |
================================================================================
Enter your choice(0-4):
```

4) Select **1** in the BootWare operation serial interface submenu, and respond to the following prompts:

```
Loading.....................................................................
.....................................................................
.....................................................Done!
20710792 bytes downloaded!
Updating Basic BootWare? [Y/N]Y
Updating Basic BootWare.............Done!
Updating Extend BootWare? [Y/N]Y
Updating Extend BootWare.............Done!
```

After download of the BootWare program file, the system display returns to the BootWare operation Ethernet interface submenu.

```
====================<BOOTWARE OPERATION ETHERNET SUB-MENU>==================
|<1> Update Full BootWare                                                  |
```

```
|<2> Update Extend BootWare                                              |
|<3> Update Basic BootWare                                               |
|<4> Modify Ethernet Parameter                                           |
|<0> Exit To Main Menu                                                   |
==========================================================================
Enter your choice(0-4):
```

5) Select **0** in the BootWare operation Ethernet interface submenu to return to the BootWare operation submenu:

```
=========================<BootWare Operation Menu>=========================
|Note:the operating device is cfa0                                       |
|<1> Backup Full BootWare                                                |
|<2> Restore Full BootWare                                               |
|<3> Update BootWare By Serial                                           |
|<4> Update BootWare By Ethernet                                         |
|<0> Exit To Main Menu                                                   |
==========================================================================
Enter your choice(0-4):
```

6) Select **0** in the BootWare operation submenu to return to the BootWare main menu:

```
============================<EXTEND-BOOTWARE MENU>=========================
|<1> Boot System                                                         |
|<2> Enter Serial SubMenu                                                |
|<3> Enter Ethernet SubMenu                                              |
|<4> File Control                                                        |
|<5> Modify BootWare Password                                            |
|<6> Skip Current System Configuration                                   |
|<7> BootWare Operation Menu                                             |
|<8> Clear Super Password                                                |
|<9> Storage Device Operation                                            |
|<0> Reboot                                                              |
==========================================================================
Enter your choice(0-9): 0
```

7) Select **0** in the BootWare main menu to reboot the LSQM1WCMB0 access controller module.

# Upgrading Applications

The same procedure is used to upgrade the three types of application files. This section describes how to upgrade the main application file.

## Upgrading Applications Through a Serial Connection

Follow these steps to upgrade the main application file through a serial connection:

1) Use the serial interface submenu to update application files. Select **2** in the BootWare main menu to enter the serial interface submenu. For details about this menu, refer to section "Serial interface submenu" on page 5-5.
2) To improve the upgrade speed, first modify the serial interface baud rate. For details, refer to section "Modifying serial communication parameters" on page 5-7.
3) Select **2** in the serial interface submenu. The following prompt appears:

```
Please Start To Transfer File, Press <Ctrl+C> To Exit.
Waiting ...CCCCCCCCCC
```

4) Select and send the application file using HyperTerminal. The procedure for upgrading an application file is the same as upgrading the BootWare. For details, refer to section "Upgrading the BootWare through a serial connection" on page 5-9.

---

**Note**

The size of an application program is typically over 10 MB. Even at the baud rate of 115,200 bps, the upgrade takes about 30 minutes. Therefore, you are recommended to upgrade an application program through an Ethernet interface.

---

## Upgrading Applications Through the Management Ethernet Interface

Select **3** in the BootWare main menu to enter the Ethernet interface submenu. For details about this submenu, refer to section "Ethernet interface submenu" on page 5-5.

### Configuring Ethernet interface parameters

Before upgrading an application program through an Ethernet interface, you need to configure the Ethernet interface of the LSQM1WCMB0 access controller module, as follows.

Select **3** in the BootWare main menu to enter the Ethernet interface submenu. Then, select **5** to enter the Ethernet interface configuration submenu:

```
============================<ETHERNET PARAMETER SET>============================
|Note:       '.' = Clear field.                                               |
|            '-' = Go to previous field.                                      |
|          Ctrl+D = Quit.                                                     |
================================================================================
Protocol (FTP or TFTP) :tftp
Load File Name         :main.bin
Target File Name       :main.bin
Server IP Address      :192.168.0.1
Local IP Address       :192.168.0.2
Gateway IP Address     :192.168.0.10
```

---

**Note**

When configuring a parameter, you can enter a new value directly, or press **Enter** to accept the default value that follows a colon. Type . to clear the current input, - to return to the previous parameter field, and press **Ctrl+D** to quit from the parameter configuration interface.

---

### Upgrading applications through the management Ethernet interface

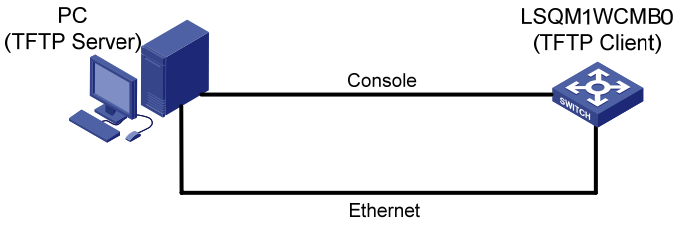
The Trivial File Transfer Protocol (TFTP) is used for upgrading applications through the management Ethernet interface. TFTP is a TCP/IP protocol used for file transfer between client and server. It provides a simple and low-overhead file transfer service. TFTP provides unreliable data transfer over

UDP and does not provide any access authorization and authentication mechanism. It employs the timeout retransmission method to implement best-effort delivery of data. Compared with FTP, TFTP has a much smaller software size.

Follow these steps to upgrade an application through the management Ethernet interface:

1) Set up a software upgrade environment. Connect the 10/100/1000Base-TX out-of-band management interface to a PC with a network cable.

**Figure 5-7** Set up a software upgrade environment




2) Run TFTP Server on the PC, and specify the path of the application file to be downloaded.

---

**Note**

The TFTP server software is not provided with the LSQM1WCMB0 access controller module. You must make sure that it is available by yourself.

---

3) Modify the Ethernet interface parameters. For details, refer to section "Configuring Ethernet interface parameters" on page 5-14.
4) Select **3** in the BootWare main menu to enter the Ethernet interface submenu.
5) Select **2** in the Ethernet interface submenu. The following information appears:

```
Loading.....................................................................
.....................................................................
.....................Done!
20710792 bytes downloaded!
Updating File cfa0:/main.bin.....................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
```

```
.....
.....
.....
.....
.....Done!
```

6) Select **0** to return to the BootWare main menu.

7) Select **1** in the BootWare main menu to reboot the system.

---

**Caution**

- If the downloaded file has the same file name with an existing file in the CF card, the system prompts **The file is exist, will you recover it? [Y/N]**. If you choose **Y**, the existing file will be replaced.
- Make sure that sufficient space is available in the CF card. In case of insufficient space, the system will give a prompt message.
- The new application file directly replaces the existing file of the same type. In this example, the downloaded file **main.bin** replaces the existing application file of the type M and becomes the only main application file.
- For details about the application file types, refer to section "Application Files" on page 5-1.

---

# Maintaining the Application and Configuration Files Through the CLI

After the LSQM1WCMB0 access controller module is normally started, you can upgrade, back up and restore the application and configure files through the CLI.

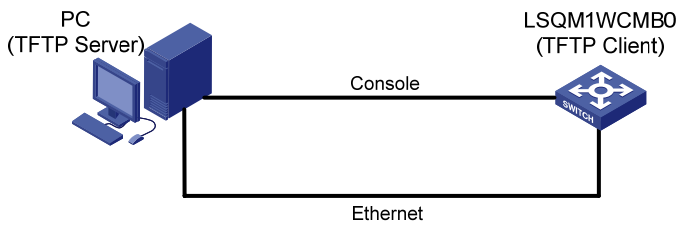
## Uploading and Downloading Application and Configuration Files Using TFTP

Using the LSQM1WCMB0 access controller module as the TFTP client and a file server as the TFTP server, you can use commands on the console terminal, which can be the same file server, to upload configuration and application files from the LSQM1WCMB0 to the file server or download the files from the file server to the LSQM1WCMB0.

### Setting up a configuration environment

1) Set up a configuration environment by referring to section "Upgrading applications through the management Ethernet interface" on page 5-14.

**Figure 5-8** Set up an environment for software maintenance through the CLI



2) Run TFTP Server on the file server and set the file path.

3) Configure the IP addresses for both sides, which must be on the same subnet. For example, set the IP address of the TFTP server to 192.168.0.1, and that of the LSQM1WCMB0 access controller module's management Ethernet interface to 192.168.0.2. Then use **ping** to verify the network connectivity.

### Backing up and restoring application and configuration files

After setting up the environment, perform the following operations on the console terminal:

1) View the files in the current file system with the **dir** command.

```
<H3C>dir
Directory of cfa0:/

   0     -rw-       617  Jul 26 2007 08:22:56   startup.cfg
   1     -rw-  10021148  Jul 28 2035 10:35:38   main.bin
   2     -rw-    356124  Jul 27 2007 09:23:54   bootware.app

247808 KB total (237996 KB free)

File system type of cfa0: FAT32

<H3C>
```

2) Perform the following to backup or restore (download) a file.

- To back up **startup.cfg** on the LSQM1WCMB0 by saving it as **startup.bak** on the TFTP server, use the following command:

```
<H3C>tftp 192.168.0.1 put startup.cfg config.bak

  File will be transferred in binary mode
  Sending file to remote TFTP server. Please wait...\
  TFTP:      617 bytes sent in 0 second(s).
  File uploaded successfully.
```

- To download **config.cfg** from the TFTP server to the LSQM1WCMB0, use the following command:

```
<H3C>tftp 192.168.0.1 get config.cfg statup.cfg
The file statu.cfg exists. Overwrite it?[Y/N]:y
  Verifying server file...
  Deleting the old file, please wait...

  File will be transferred in binary mode
  Downloading file from remote tftp server, please wait...\
  TFTP:     617 bytes received in 0 second(s)
  File downloaded successfully.
```

If a file with the same name already exists on the LSQM1WCMB0, the system will ask you whether to replace the existing file. Enter **Y** to replace it, or **N** to abort.

**Caution**

- When you back up a file to the server and if a file with the same name already exists on the server, the existing file will be replaced.
- The above-mentioned operations are performed in user view.
- The backup configuration file can be modified by using a text editor. You can update the system configuration by downloading a modified configuration file. Your update takes effect after the system is restarted. Likewise, you can update the main application file by downloading a new application file from the server and replacing the existing main application file on the LSQM1WCMB0.

## Uploading and Downloading Application and Configuration Files Using FTP

### Using the LSQM1WCMB0 as the FTP server

The File Transfer Protocol (FTP) is an application layer protocol in the TCP/IP suite. It is mainly used for file transfer between remote hosts. FTP provides a reliable, connection-oriented data transfer service over TCP.

With FTP service enabled and FTP server authentication and authorization configured, you can use FTP to download and upload files. The FTP server supports multi-user access. When the remote FTP client sends a request to the FTP server, the FTP server executes an action accordingly and returns the execution result to the client.

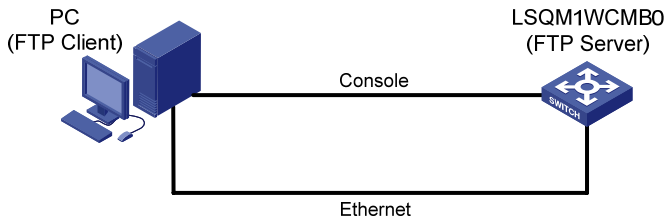
With the LSQM1WCMB0 as the FTP server, you can run the FTP client application on a PC and log in to the LSQM1WCMB0 for file operations.

Before using FTP, you need to install the FTP client application on your PC. The FTP client software is not provided with the LSQM1WCMB0. You must make sure that it is available by yourself. The description here assumes that you are using the FTP client application of Microsoft Windows XP.

FTP with the access controller module as the FTP server:

1) Set up a network environment, as shown below:

**Figure 5-9** Set up a software maintenance environment (LSQM1WCMB0 as FTP server)




2) Configure the IP addresses for both sides, which must be on the same subnet. For example, set the IP address of the FTP client to 192.168.0.1, and that of the LSQM1WCMB0 access controller module's management Ethernet interface to 192.168.0.2. Then use **ping** to verify the network connectivity.

Start FTP service.

```
[H3C]ftp server enable
```

```
% Start FTP server
```

3) Add an authorized FTP username and password.

```
[H3C]local-user guest                              Create user account guest
[H3C-luser- guest]service-type ftp                 Set user type to FTP
[H3C-luser- guest]password simple 123456           Set password 123456 for user guest
```

4) Enter **ftp** in the MD-DOS prompt window to start the FTP client application on the PC, and log in to the LSQM1WCMB0.

```
C:\Documents and Settings\Administrator>ftp
ftp>                                               The system prompt changed to ftp>
ftp> open 192.168.0.2                              IP address of the LSQM1WCMB0
Connected to 192.168.0.2.
220 FTP service ready.
User (192.168.0.2:(none)): guest                   Username configured on the LSQM1WCMB0
331 Password required for guest
Password:                                          Enter the password 123456
Successfully connected to the server
```

5) Backup and restore files.

- To backup **main.bin** on the LSQM1WCMB0 to the PC, do the following:

```
ftp> binary                                        Set the transfer mode to binary
200 Type set to I.
ftp> lcd c:\temp                                   Change the local path
Local directory now C:\temp.
ftp> get main.bin main.bin                         Backup to PC
200 Port command okay.
150 Opening BINARY mode data connection for main.bin.
226 Transfer complete.
ftp: 14323376 bytes received in 16.81Seconds 851.87Kbytes/sec.
```

- To restore the backup file to the LSQM1WCMB0, do the following:

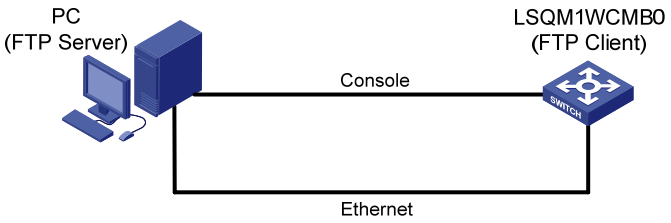
```
ftp> put main.bin main.bin                         Restore file to LSQM1WCMB0
200 Port command okay.
150 Opening BINARY mode data connection for main.bin.
226 Transfer complete.
ftp: 14323376 bytes sent in 8.29Seconds 1727.37Kbytes/sec.
ftp> quit                                          Quit FTP
221 Server closing.
```

### Using the LSQM1WCMB0 as the FTP client

You can also maintain the file system of the LSQM1WCMB0 through FTP with the access controller module as the FTP client by following the steps below.

1) Set up a maintenance environment.

**Figure 5-10** Set up a software maintenance environment (LSQM1WCMB0 as FTP




client)

2) Run the FTP server program on the PC, set the file path, and set the username and password for the LSQM1WCMB0.
3) Configure the IP addresses for both sides, which must be on the same subnet. For example, set the IP address of the FTP server to 192.168.0.1, and that of the LSQM1WCMB0 access controller module's management Ethernet interface to 192.168.0.2. Then use **ping** to verify the network connectivity.
4) Log in to the FTP server through the console terminal connected with the LSQM1WCMB0.

```
<H3C>ftp 192.168.0.1
Trying 192.168.0.1 ...
Press CTRL+K to abort
Connected to 192.168.0.1.
220 3Com 3CDaemon FTP Server Version 2.0
User(192.168.0.1:(none)):guest
331 User name ok, need password
Password:
230 User logged in
[ftp]
```

5) Maintain the software of the LSQM1WCMB0.

Use the **get** and **put** commands to download and backup files.

```
[ftp]get main.bin main.bin
 cfa0:/main.bin has been existing. Overwrite it?[Y/N]:y
200 PORT command successful.
150 File status OK ; about to open data connection
226 Closing data connection; File transfer successful.
FTP: 21254592 byte(s) received in 138.256 second(s), 153.00K byte(s)/sec.
[ftp]put main.bin main.bin
200 PORT command successful.
150 File status OK ; about to open data connection
226 Closing data connection; File transfer successful.
FTP: 21254592 byte(s) sent in 36.520 second(s), 581.00Kbyte(s)/sec.
[ftp]quit
221 Service closing control connection
```

# Setting Application and Configuration File Types

## Setting File Types Through BootWare Menu Options

You can use the file control submenu to display and modify file types.

Select **4** in the BootWare main menu to enter the file control submenu. The following information appears:

```
================================<File CONTROL>================================
|Note:the operating device is cfa0                                           |
|<1> Display All File(s)                                                     |
|<2> Set Application File type                                               |
|<3> Delete File                                                             |
|<0> Exit To Main Menu                                                       |
==============================================================================
Enter your choice(0-3):
```

### Viewing all files

Select **1** in the file control submenu. The following information appears:

```
Display all file(s) in cfa0:
 'M' = MAIN      'B' = BACKUP      'S' = SECURE      'N/A' = NOT ASSIGNED
==============================================================================
|NO. Size(B)   Time                 Type   Name                              |
|1   10021476  Jan/20/2034 10:12:36 M      cfa0:/main.bin                    |
|2   795       Jan/20/2006 11:58:50 N/A    cfa0:/startup.cfg                 |
==============================================================================
```

### Setting application file types

1) Select **2** in the file control submenu. The following information appears:

```
'M' = MAIN      'B' = BACKUP      'S' = SECURE      'N/A' = NOT ASSIGNED
==============================================================================
|NO. Size(B)   Time                 Type   Name                              |
|1   20710792  Jan/20/2034 10:12:36 M      cfa0:/main.bin                    |
|0   Exit                                                                    |
==============================================================================
Enter file No:
```

2) Enter the file number at the prompt above. In this example, type **1** for **main.bin**, and press **Enter**. The system prompts you to specify a new file type:

```
Modify the file attribute:
==============================================================================
|<1> +Main                                                                   |
|<2> -Main                                                                   |
|<3> +Backup                                                                 |
|<4> -Backup                                                                 |
|<0> Exit                                                                    |
==============================================================================
Enter your choice(0-4)
```

3) Select **1** for +Main (set to M), **2** for –Main (remove the current M attribute), **3** for +Backup (set to B), or **4** for –Backup (remove the current type B setting). For details about the file types, refer to section “Application Files” on page 5-1.

### Deleting a file

1) Select **3** in the file control submenu. The following information appears:

```
Deleting the file in cfa0:
 'M' = MAIN      'B' = BACKUP      'S' = SECURE      'N/A' = NOT ASSIGNED
============================================================================
|NO. Size(B)   Time                 Type   Name                            |
|1   10021476  Jan/20/2034 10:12:36 M      cfa0:/main.bin                  |
|2   795       Jan/20/2006 11:58:50 N/A    cfa0:/startup.cfg               |
|0   Exit                                                                  |
============================================================================
Enter file No:
```

2) Type a file number and press **Enter**. The system asks you to confirm your operation.

```
The file you selected is cfa0:/startup.cfg,Delete it? [Y/N]
```

3) Enter **Y** for confirmation. The following message appears, indicating the file is successfully deleted.

```
Deleting.........Done!
```

### Returning to the main menu

Select **0** to return to the BootWare main menu.

## Setting File Types Through the CLI

### Viewing all files

View the files in the current file system with the **dir** command.

```
<H3C>dir
Directory of cfa0:/

   0     -rw-       795  Jan 20 2006 11:58:50   startup.cfg
   1     -rw-  10021476  Jan 20 2034 10:12:36   main.bin

247808 KB total (237996 KB free)

File system type of cfa0: FAT32

<H3C>
```

### Setting application file types

- To set type of **main.bin** to **main**, use the following command:

```
<H3C>boot-loader file main.bin main
This command will be set the boot file.Continue?[Y/N]:y
The specified file will be used as the main boot file at the next reboot!
```

- To set type of **main.bin** to **backup**, use the following command:

```
<H3C>boot-loader file main.bin backup
This command will be set the boot file.Continue?[Y/N]:y
The specified file will be used as the main boot file at the next reboot!
```

### Deleting a file

To delete **startup.cfg**, use the following command:

```
<H3C>delete startup.cfg
Delete cfa0:/startup.cfg?[Y/N]:y

%Delete file cfa0:/startup.cfg...Done.
```

# Dealing with Password Loss

This section describes how to deal with password loss.

## User Password Loss

If you forget your user password, the system will refuse your login. In this case, you can set a new user password by following the steps below.

1) Enter the BootWare main menu and select **6** to bypass the current configuration in system startup.

The following information appears:

```
Flag Set Success.
```

2) When the BootWare main menu appears again, select **0** to restart the system.

```
System starts booting ...
```

3) Set a new user password in system view.

```
[H3C]user-interface con 0
[H3C-ui-aux0]authentication-mode password
[H3C-ui-aux0]set authentication password simple 123456
```

This information indicates that password authentication is used for console port login, the password is set to **123456**, and it is stored in plain text.

---

**Note**

- After reboot, the system runs with the initial default configuration, while the original configuration file is still kept in the CF card. To restore the original configuration, use the **display saved-configuration** command to locate the configuration file, and then copy and run it.
- If the password is stored in plain text, you can use the **display current-configuration** command to view the password in the current configuration. If you use the **set authentication password cipher 123456** command to set your password, the password will be stored in cipher text.

---

4) Save your new password.

```
[H3C] save
```

Note

After modifying the user password, use the **save** command to save it.

## BootWare Password Loss

Contact your local dealer if you forget the BootWare password. The technical support staff will help you log in to the LSQM1WCMB0 and set a new password.

1) Enter the BootWare main menu.
2) Select **5** in the BootWare main menu, and follow the prompts to change the password.

```
please input old password:
Please input new password:
Please input new password again:
Password Set Successfully.
```

Note

Once you enter a wrong old password or different new passwords, the password modification operation fails and the system exits this operation.

## Super Password Loss

The super password enables you to switch between four super levels. If you forget the super password, you will be unable to perform some higher privilege operations.

Follow these steps to bypass the super password:

1) Select **8** in the BootWare main menu.

The following message appears:

```
Clear Application Password Success!
```

2) Exit the menu and reboot the LSQM1WCMB0. You will directly enter system view after the access controller module restarts.

Note

This setting works only once. When the LSQM1WCMB0 is restarted for a second time, the super password is restored.

# Backing Up and Restoring the BootWare

## Backing Up and Restoring the BootWare Through BootWare Menu Options

Select **7** in the BootWare main menu to enter the BootWare operation submenu. For details about this submenu, refer to section "BootWare operation submenu" on page 5-6.

- To back up the entire BootWare, select **1** in the BootWare main menu and follow the prompts.

```
Will you backup the Basic BootWare? [Y/N]Y
Begin to backup the Basic BootWare..................Done!
Will you backup the Extend BootWare? [Y/N]Y
Begin to backup the Extend BootWare.................Done!
```

By now, the entire BootWare has been copied to the CF card.

- To restore the backup BootWare from the CF card, select **2** in the BootWare main menu and follow the prompts.

```
Will you restore the Basic BootWare? [Y/N]Y
Begin to restore Normal Basic BootWare..............Done!
Will you restore the Extend BootWare? [Y/N]Y.........Done!
```

## Backing Up and Restoring the BootWare Through the CLI

You can use the **bootrom** command to back up and restore the BootWare program.

### Backing up the BootWare

- To backup the entire BootWare, use the following command:

```
<H3C>bootrom backup all
Now backuping bootrom, please wait...

Backup bootrom completed!
```

By now, the entire BootWare has been copied to the CF card.

- To backup the extended BootWare, use the following command:

```
<H3C>bootrom backup part
Now backuping bootrom, please wait...

Backup bootrom completed!
```

By now, the extended BootWare has been copied to the CF card.

### Restoring the BootWare

- To restore the entire BootWare, use the following command:

```
<H3C>bootrom restore all
This command will restore bootrom file, Continue? [Y/N]:y
Now restoring bootrom, please wait...

Restore bootrom completed!
```

By now, the backup entire BootWare has been restored to the system.

- To restore the extended BootWare, use the following command:

```
<H3C>bootrom restore part
This command will restore bootrom file, Continue? [Y/N]:y
Now restoring bootrom, please wait...

Restore bootrom completed!
```

By now, the backup extended BootWare has been restored to the system.

# 6 Troubleshooting

## Troubleshooting Software Loading

If software loading fails, the system runs in original version. In this case, check if the physical ports are properly connected:

- If the ports are not properly connected, reconnect them correctly and restart the loading procedure.
- If the ports are properly connected, check the loading process information displayed on the console terminal for input errors. In case of any input error, restart the loading process with correct inputs.

Possible input errors include:

- The serial port baud rate setting on the console terminal is not timely changed back after software download using Xmodem with a changed baud rate.
- A wrong IP address, file name, or TFTP Server work path specified for software loading using TFTP
- A wrong IP address, file name, username, or password specified for software loading using FTP

If the cause cannot be located, contact your local dealer for help.

## Troubleshooting the Configuration System

If the LSQM1WCMB0 access controller module passes the POST after the switch is powered on, the console terminal connected with the access controller module displays the startup banner and prompt messages; if the configuration system is faulty, you may see nothing or illegible characters on the console terminal.

### No display on the console terminal

If no information is displayed on the console terminal, please check:

- Whether the power supply of the switch is normal
- Whether the console cable is correctly connected

If the cause cannot be located in the above-mentioned steps, please check:

- Whether the console cable is in good condition
- Whether the terminal settings are correct.

### Illegible display on the console terminal

Illegible display on the console terminal is very likely to be caused by terminal parameter setting errors. Verify the following terminal parameter settings:

- Bits per second: 9600
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none
- Terminal emulation: VT100.